

### FEATURES

- High flow due to angled seat design
- Anti-waterhammer design (fluid entry under the disc)
- Vacuum operation up to 10<sup>-2</sup> mbar
- Wide range of piston-type operators (32 - 50- 63 - 90 - 125 mm dia.) rotatable through 360°, for maximum performance at different minimum pilot pressures
- High performance, maintenance-free stuffing box
- The valves satisfy Pressure Equipment Directive 97/23/EC, category 1 (DN > 25) or article 3.3 (DN ≤ 25)

### GENERAL

<b>Differential pressure</b>	See «SPECIFICATIONS» [1 bar = 100 kPa]
<b>Maximum allowable pressure</b>	16 bar
<b>Ambient temperature range</b>	-10°C to +60°C
<b>Maximum viscosity</b>	600 cSt (mm <sup>2</sup> /s)
<b>Pilot fluid</b>	Filtered air or water <sup>(1)</sup>
<b>Max. pilot pressure</b>	10 bar
<b>Min. pilot pressure</b>	See below and following page
<b>Pilot fluid temperature</b>	-10°C to +60°C
<b>Response time</b>	See page V402-5



fluids (*)	temperature range	disc seal (*)
DN ≤ 50: air and gas groups 1 & 2 DN 65: air and gas group 2 all DN: water, oil, liquids groups 1 & 2 and steam	- 10°C to + 184°C	PTFE

### MATERIALS IN CONTACT WITH FLUID

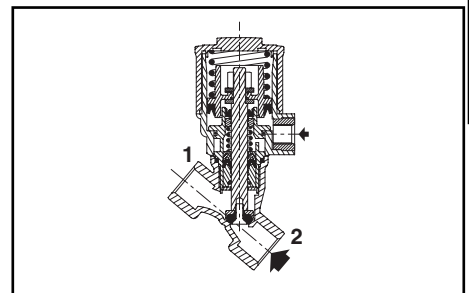
(\*) Ensure that the compatibility of the fluids in contact with the materials is verified

	Bronze body	Stainless steel body All AISI 316L	
<b>Valve body</b>	Bronze	AISI 316L	AISI 316L <sup>(2)</sup>
<b>Stuffing box housing</b>	Brass	AISI 316L	AISI 316L
<b>Stem</b>	Stainless steel	Stainless steel	AISI 316L
<b>Disc</b>	Brass	Stainless steel	AISI 316L
<b>Stuffing box packing</b>	PTFE chevrons	PTFE chevrons	PTFE chevrons
<b>Wiper seal</b>	FPM	FPM	FPM
<b>Disc seal</b>	PTFE	PTFE	PTFE
<b>Valve body seal</b>	PTFE	PTFE	PTFE

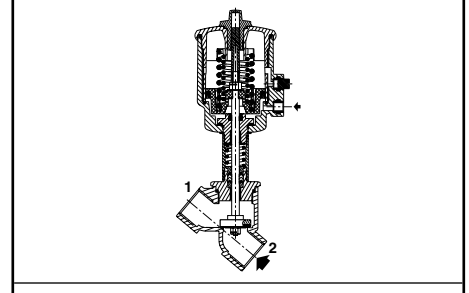
### OTHER MATERIALS

<b>Operator</b>	Glass fibre filled PA
<b>Optical position indicator</b>	PA 12, supplied standard on valves with 63, 90 and 125 mm operators

<sup>(1)</sup> For dia. 32, 50 and 63 mm operators: At service fluid temperatures inside the valve body above 100°C, it is prohibited to pilot the valve with water.  
<sup>(2)</sup> NET-INOX passivation treatment included.



NC function, entry under the disc, 32 and 50 mm operators



NC function, entry under the disc, 63, 90 and 125 mm operators

### SPECIFICATIONS

piping (ISO 6708)		flow coefficient Kv		pilot pressure (bar)		operating pressure differential (bar)				operator diameter (mm)	catalogue number		
pipe size (G*)	DN	(m <sup>3</sup> /h)	(l/min)	min.	max.	min.	max.		steam (*) (≤184°C)		bronze	stainless steel	all AISI 316L
						air, inert gas, aggressive fluids (*)		water, oil, liquids, aggressive liquids(*)					
<b>NC - Normally closed, entry under the disc <sup>(1)</sup></b>													
3/8	10	2,8	47	4	10	0	16	16	10	32	-	E290A791	E290A845
		4,1	68	4	10	0	12	12	10	32	-	E290A792	E290A846
1/2	15	4,9	82	4	10	0	16	16	10	50	E290A384	E290A393	E290A402
				2,5	10	0	16	16	10	63	E290B002	E290B045	E290B088
		1,5	10	0	5	5	5	63	E290B001	E290B044	E290B087		
3/4	20	6,5	108	4	10	0	6	6	6	32	-	E290A793	E290A847
				10	10	10	50	E290A385	E290A394	E290A403			
		9,4	157	16	16	10	63	E290B005	E290B048	E290B091			
				2,5	10	0	12	12	10	63	E290B004	E290B047	E290B090
				1,5	10	0	4	4	4	63	E290B003	E290B046	E290B089
1	25	12,8	213	4	10	0	6	6	6	50	E290A386	E290A395	E290A404
				10	10	10	63	E290B010	E290B053	E290B096			
		4	10	0	16	16	10	90	E290B011	E290B054	E290B097		
					6	6	6	63	E290B008	E290B051	E290B094		
					12	12	10	90	E290B009	E290B052	E290B095		
		2,5	10	0	3	3	3	63	E290B006	E290B049	E290B092		
					5	5	5	90	E290B007	E290B050	E290B093		

## SPECIFICATIONS

piping (ISO 6708)		flow coefficient Kv		pilot pressure (bar)		operating pressure differential (bar)				operator diameter	catalogue number		
pipe size (G*)	DN	(m³/h)	(l/min)	min.	max.	min.	max.				(mm)	bronze	stainless steel
							air, inert gas, aggressive fluids (*)	water, oil, liquids, aggressive liquids(*)	steam (*) (≤184°C)				
<b>NC - Normally closed, entry under the disc <sup>(1)</sup></b>													
1 1/4	32	27	450	4	10	0	6	6	6	63	E290A016	E290A059	E290A102
				12	12	10	90	E290A017	E290A060	E290A103			
				2,5	10	0	3	3	3	63	E290A014	E290A057	E290A100
		29	483	7	7	7	90	E290A015	E290A058	E290A101			
				1,5	10	0	1,5	1,5	1,5	63	E290A012	E290A055	E290A098
				3	3	3	90	E290A013	E290A056	E290A099			
	40	45	750	4	10	0	4	4	4	63	E290A020	E290A063	E290A106
				8	8	8	90	E290A021	E290A064	E290A107			
				2,5	10	0	4	4	4	90	E290A019	E290A062	E290A105
		48	800	1,5	10	0	3	3	3	90	E290A018	E290A061	E290A104
				4	10	0	16	16	10	125	E290A482	E290A495	E290A508
				2,5	10	0	10	10	10	125	E290A481	E290A494	E290A507
2	50	59	983	1,5	10	0	4	4	4	125	E290A480	E290A493	E290A506
				2,5	10	0	2,5	2,5	2,5	63	E290A024	E290A067	E290A110
				6	6	6	90	E290A025	E290A068	E290A111			
		66	1100	2,5	10	0	2,5	2,5	2,5	90	E290A023	E290A066	E290A109
				1,5	10	0	1	1	1	90	E290A022	E290A065	E290A108
				4	10	0	10	10	10	125	E290A485	E290A498	E290A511
	65	94	1567	2,5	10	0	5	5	5	125	E290A484	E290A497	E290A510
				1,5	10	0	2	2	2	125	E290A483	E290A496	E290A509
				4	10	0	2	2	2	90	E290A487	E290A500	E290A513
		111	1850	4	10	0	6	6	6	125	E290A488	E290A501	E290A514
				2,5	10	0	1	1	1	125	E290A486	E290A499	E290A512
				<b>NO - Normally open, entry under the disc</b>									
3/8	10	2,8	47	IX (*)	10	0	16	16	10	32	-	E290A794	E290A848
		4,1	68	IX (*)	10	0	16	16	10	32	-	E290A795	E290A849
1/2	15	4,9	82	I (*)	10	0	16	16	10	50	E290A387	E290A396	E290A405
		6,5	108	II (*)	10	0	16	16	10	63	E290B026	E290B069	E290B112
3/4	20	9,4	157	IX (*)	10	0	16	16	10	32	-	E290A796	E290A850
		12,8	213	I (*)	10	0	16	16	10	50	E290A388	E290A397	E290A406
1	25	16,5	275	II (*)	10	0	16	16	10	63	E290B027	E290B070	E290B113
		12,8	213	I (*)	10	0	16	16	10	50	E290A389	E290A398	E290A407
1 1/4	32	16,5	275	II (*)	10	0	16	16	10	63	E290B028	E290B071	E290B114
		16,5	275	III (*)	10	0	16	16	10	90	E290B029	E290B072	E290B115
1 1/2	40	27	450	II (*)	10	0	16	16	10	63	E290A030	E290A073	E290A116
		27	450	III (*)	10	0	16	16	10	90	E290A031	E290A074	E290A117
2	50	29	483	IV (*)	10	0	16	16	10	125	E290A643	E290A647	E290A651
		45	750	II (*)	10	0	11	11	10	63	E290A032	E290A075	E290A118
1 1/2	40	45	750	III (*)	10	0	16	16	10	90	E290A033	E290A076	E290A119
		48	800	IV (*)	10	0	16	16	10	125	E290A489	E290A502	E290A515
2	50	59	983	II (*)	10	0	7	7	7	63	E290A034	E290A077	E290A120
		59	983	III (*)	10	0	13	13	10	90	E290A035	E290A078	E290A121
2 1/2	65	66	1100	IV (*)	10	0	16	16	10	125	E290A490	E290A503	E290A516
		94	1567	III (*)	10	0	7	7	7	90	E290A491	E290A504	E290A517
2 1/2	65	111	1850	IV (*)	10	0	16	16	10	125	E290A492	E290A505	E290A518
		<b>NC - Normally closed, entry above the disc (version recommended for rapid-cycling steam applications)</b>											
3/8	10	2,8	47	X (*)	10	0	10	-	10	32	-	E290A797	-
		4,1	68	X (*)	10	0	10	-	10	32	-	E290A798	-
1/2	15	4,9	82	V (*)	10	0	10	-	10	50	E290A390	E290A399	-
		6,5	108	VI (*)	10	0	10	-	10	63	E290B036	E290B079	-
3/4	20	9,4	157	X (*)	10	0	10	-	10	32	-	E290A799	-
		12,8	213	V (*)	10	0	10	-	10	50	E290A391	E290A400	-
1	25	16,5	275	VI (*)	10	0	10	-	10	63	E290B037	E290B080	-
		16,5	275	V (*)	10	0	10	-	10	50	E290A392	E290A401	-
1 1/4	32	27	450	VI (*)	10	0	10	-	10	63	E290B038	E290B081	-
		27	450	VII (*)	10	0	10	-	10	90	E290A039	E290A082	-
1 1/2	40	45	750	VI (*)	10	0	10	-	10	63	E290A136	E290A137	-
		45	750	VII (*)	10	0	10	-	10	90	E290A040	E290A083	-
2	50	59	983	VI (*)	10	0	9	-	9	63	E290A041	E290A084	-
		59	983	VII (*)	10	0	10	-	10	90	E290A042	E290A085	-
2 1/2	65	94	1567	VII (*)	10	0	10	-	10	90	E290A043	E290A086	-
		111	1850	VIII (*)	10	0	10	-	10	125	E290A623	E290A625	-
2 1/2	65	111	1850	VIII (*)	10	0	10	-	10	125	E290A624	E290A626	-

(\*) Minimum pilot pressure varies with differential pressure, see page V402-5.

(1) Calculation of the minimum pilot pressure at a ΔP of max. 10 bar with allowable backpressure (backpressure not recommended with liquids as waterhammer may occur).

- 32 and 50 mm operators, 4 bar minimum pilot pressure version: add 2 bar to the minimum pilot pressure of chart V or X, page V402-5.

- 63, 90 and 125 mm operators, 4 bar minimum pilot pressure version: add 1,5 bar to the minimum pilot pressure of chart VI, VII or VIII, page V402-5.

### OPTIONS AND ACCESSORIES (see page V435/V436)

- Signaling box or compact signaling unit
- Stroke limiter for opening
- Manual safety device
- Optical position indicator on 32-50 mm operators, NC function
- Adapter plate for NAMUR pad mounting pilot (63-90-125 mm operators only)
- Oxygen service (except DN 65), pressure limited to 15 bar, temperature limited to + 60°C
- Vacuum applications up to  $1,33 \cdot 10^{-3}$  mbar
- NET-INOX passivation treatment on stainless steel body valve
- ATEX 94/9/EC versions for potentially explosive atmospheres
- Other pipe connections are available on request

### INSTALLATION

- The valves can be mounted in any position without affecting operation
- Compatible with ASTM 1, 2 and 3 oils
- Pipe connections (G\*) have standard combination thread according to ISO 228/1 and ISO 7/1
- Installation/maintenance instructions are included with each valve

### SPARE PARTS KITS

DN	spare parts kit no.	
	Ø 32 mm	Ø 50-63-90-125 mm
10	<b>C140100</b>	-
15	<b>C140101</b>	<b>C131204</b> <sup>(1)</sup>
20	<b>C140102</b>	<b>C131205</b> <sup>(1)</sup>
25	-	<b>C131206</b> <sup>(1)</sup>
32	-	<b>C131207</b> <sup>(1)</sup>
40	-	<b>C131208</b> <sup>(1)</sup>
50	-	<b>C131209</b> <sup>(1)</sup>
65	-	<b>C131622</b> <sup>(1)</sup>

<sup>(1)</sup> Standard suffix VM also applies to kits (see V435).  
 - Not available

### ORDERING EXAMPLES:

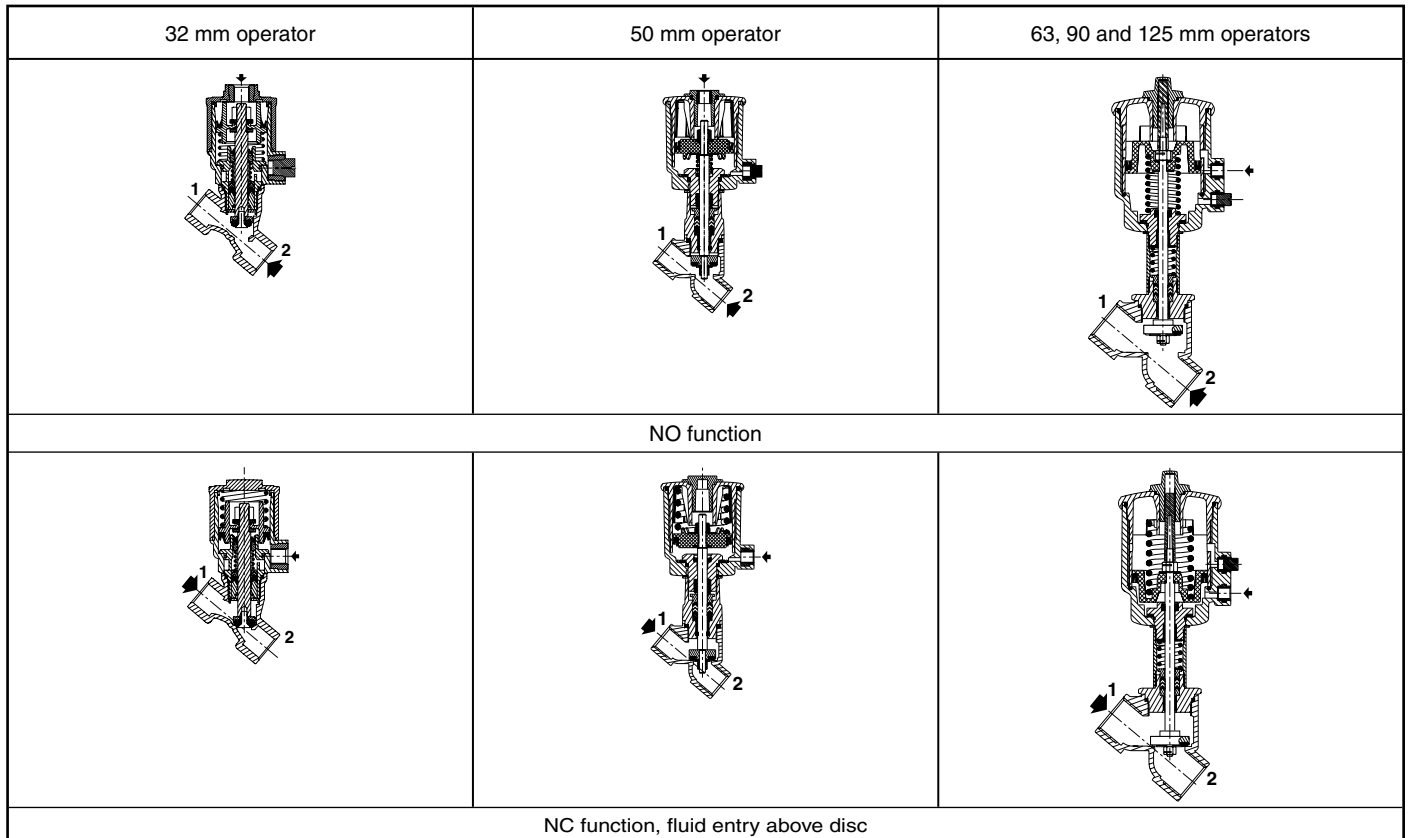
E	290	A	792	
E	290	B	002	SM2
E	290	A	791	SU
E	290	A	082	

pipe thread \_\_\_\_\_  
 basic number \_\_\_\_\_ suffix \_\_\_\_\_

### ORDERING EXAMPLES KITS:

C140100	
C140205	
C140205	VM

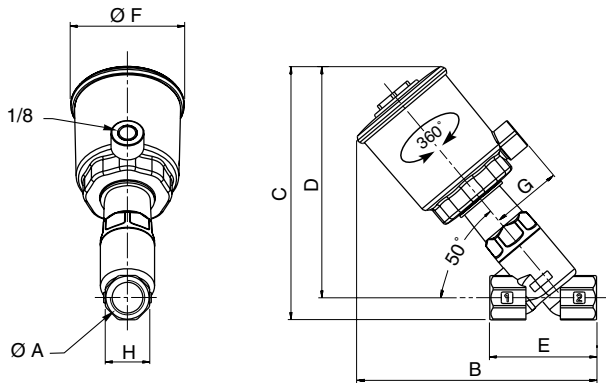
basic number \_\_\_\_\_ suffix \_\_\_\_\_



### DIMENSIONS (mm), WEIGHT (kg)



**TYPE 01-02**  
 32 and 50 mm operators  
 Fluid entry:  
 under the disc at 2  
 above the disc at 1

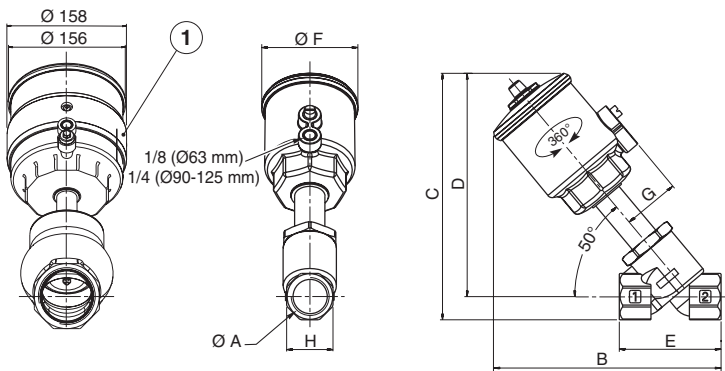


type	operator diameter	ØA	B	C	D	E	ØF	G	ØH	weight <sup>(1)</sup>
01	32 mm	3/8	92	93	81,5	55	43,5	27	23,5	0,35
		1/2	99	97	83,5	65	43,5	27	28	0,4
		3/4	107	104,5	88	75	43,5	27	30	0,45
02	50 mm	1/2	142	154,5	141	65	69	43	27	0,9
		3/4	150,5	159	143	75	69	43	32	1
		1	155	165	145	90	69	43	41	1,4

<sup>(1)</sup> Weight of valve without pilot.  
 Solenoid pilot valves: see V440 (32 and 50 mm operators).



**TYPE 03-04-05**  
 63, 90 and 125 mm operators  
 Fluid entry:  
 under the disc at 2  
 above the disc at 1



① Operator dia. 125 mm, NO function

type	operator diameter	ØA	B	C	D	E	ØF	G	ØH	weight <sup>(1)</sup>
03	63 mm	1/2	170	182	169	65	85	50,5	27	1,2
		3/4	175	185	170	75	85	50,5	32	1,3
		1	179	192	172	90	85	50,5	41	1,7
		1 1/4	217	229	204	110	85	50,5	50	2,1
		1 1/2	224	245	215	120	85	50,5	60	2,9
		2	249	259	224	150	85	50,5	70	3,7
04	90 mm	1	197	209	189	90	118	67	41	2,3
		1 1/4	236	246	221	110	118	67	50	2,7
		1 1/2	243	262	232	120	118	67	60	3,5
		2	267	276	241	150	118	67	70	4,3
		2 1/2	299	300	257	190	118	67	86	6,3
05	125 mm	1 1/4	284	298	273	110	156	86	50	5,2
		1 1/2	291	313,5	283,5	120	156	86	60	6
		2	315	328	293	150	156	86	70	6,8
		2 1/2	347	352	308	190	156	86	86	8,9

<sup>(1)</sup> Weight of valve without pilot. Add 0,2 for dia. 125 mm operator NO.  
 Solenoid pilot valves: see V439 (63 mm operator) / V443 (90 and 125 mm operators).